the increase over the years from Rs. 3235.15 crores in 1989-90 to Rs. 5794.22 crores in 1994-95. Appropriate policy initiatives and the efforts of our scientists has enabled India toward proven achievements in the frontier areas of science and technology and socio-economic sectors. Government is conscious of need to step up allocation on R&D. The investment on R&D can be increased through the joint efforts of both Government and the private sector. In order to encourage and augment industrial investment in R&D, Government has introduced the following fiscal incentives and other support measures from time to time:—

Income tax relief on R&D expenditure.

Weighted Tax deduction for sponsored research.

Customs Duty exemption.

Five Year tax Holiday for commercial R&D companies.

Excise duty waiver for three years on goods produced based on indigenously developed technologies and duly patented in any one of the countries in European Union and in USA or Japan or in both.

Excise duty waiver on indigenous equipment, spare parts, consumables and prototypes procured by non-commercial Scientific and Industrial Research Organisations.

Accelerated Depreciation Allowance on plant and machinery set-up based on indigenous technology.

Price control exemption on domestic R&D based bulk drugs.

Promotion of International R&D collaborations at the enterprise/ institutional levels.

Direct funding of R&D projects in industry by Government Departments.

National Awards for outstanding R&D achievements and commercialisation of public funded R&D.

Indirect benefits like credibility for obtaining financial assistance for R&D from financial institutions.

Setting-up of Technology Development Board in September, 1996.

Biotechnology for medicinal and aromatic plants

584. SHRI SURINDER KUMAR SINGLA:
DR. SHRIKANT RAMCHANDRA JICHKAR:

Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) what is being done in the area of biotechnology for medicinal and aromatic plants;

(b) whether the experience of the Department in this area is encouraging;

(c) when will this be commercially exploited; and

(d) what steps are being taken to make this popular?

THE MINISTER OF STATE OF THE MINISTRY OF SCIENCE AND TECHNOLOGY AND THE MINISTER OF STATE OF THE MINISTRY OF POWER (SHRI YOGINDER K. ALAGH): (a) R & D in the area of biotechnology of medicinal and aromatic plants (MAPs) is being carried out in laboratories of CSIR, ICAR, MOEF, universities and through the support of the Department of Biotechnology. The aspects covered include the application of biotechnology for conservation, genetic improvement, micropropagation, production of secondary metabolites and biotransformation of intermediates into pharmaceutically useful end products.

(b) Yes, Sir, the Department of Biotechnology (DBT) has initiated a number of projects in recent years in this area. It has set up three national gene banks at the Central Institute of

Medicinal and Aromatic Plants (CIMAP), Lucknow; National Bureau of Plant Genetic Resources (NBPGR), New Delhi; and Tropical Botanic Garden and Research Institute (TBGRI), Thiruvananthapuram for the collection, conservation and characterization of our precious wealth of medicinal and aromatic plants species, which are rare/ thretened/endangered or are being used in traditional systems, or those which are commercially exploited. These gene banks have established field banks, seed and pollen repositories, in vitro and cryobanks of a number of species. Micropropagation of certain MAP species, biotransformation of intermediates for more efficient bio-activity as well as genetic manipulation of selected species have been carried out. Scientists at the National Institute of Immunology, New Delhi have isolated active fractions showing immuno-modulatory activity from pippali and guduchi. At CIMAP, 250 mutants of periwinkle have been isolatd of which one mutant "Nirmal" has shown high alkaloid content. A hairy root bank of several MAP species is also being maintained.

(c) and (d) Through the national gene banks, over 50,000 saplings of common medicinal plants have been supplied to traditional vaidyas, R&D institutions, NGOs and other bodies. Also training programmes to scientists, technicians and beneficiaries on the cultivation and processing of seven aromatic crops (palmarosa, lemongrass, vetiver, mint, geranium, jasmine and tuberose) have been successful. Selected beneficiaries have also been trained in collection, cultivation and distillation of essential oils at village level. Gradually the research leads are finding place in commercial and societal activities.

Reserach and development in CSIR

585. DR. MOHAN BABU: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether attention has been drawn to the newsitem appearing in the Hindustan Times dated 14th June, 1997 captioned "CSIR demands fund to strengthen R&D"; and

(b) if so, the steps taken to make CSIR, a self financing R&D organisation?

THE MINISTER OF STATE OF THE MINISTRY OF SCIENCE AND TECHNOLOGY AND THE MINISTER OF STATE OF THE MINISTRY OF POWER (SHRI YOGINDER K. ALAGH): (a) Yes, Sir.

(b) CSIR has in its own plans, embarked on the path of becoming of self-financing, R&D organisation. Presently, CSIR generates extra budgetary resources of the order of 50% of the Government grant by undertaking contract R&D, consultancy and rendering of S&T services. The goal CSIR has set for the Ninth Five Year Plan is to increase its extra budgetary resources to a level of 100% fo the Government grant by undertaking more value added R&D and S&T activities.

Disease free oranges

586. DR. SHRIKANT RAMCHANDRA JICHKAR: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether the Department of Biotechnology is monitoring the programme known as "Micropropagation of disease free mandarine orange by shoot tim grafting technique";

(b) if so, what are the findings of the department;

(c) what are the other micropropagation programme for citrus varieties; and

(d) what more steps are being taken in this area?

THE MINISTER OF STATE OF THE MINISTRY OF SCIENCE AND TECHNOLOGY AND THE MINISTER